Enums Solutions

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enum class

- What advantages do Modern C++'s class enums have over C-style enums?
  - Class enums are scoped. Different enums can use the same names for enumerators, which is not allowed for C-style enums
  - Class enums can be forward declared, traditional enums cannot
  - Enumerators of class enums must be explicitly converted to int. Enumerators of C-style enums will be implicitly converted, which can have surprising results

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Type Safety

- Does the following code compile and run?

```
enum suits { clubs, diamonds, hearts, spades };
enum face_value { two = 2, three, ..., king, ace };

int i = hearts;

if (i == two)
    cout << "???\n";
```

- Explain your results
  - The C-style enumerators are implicitly converted to int
  - Both ints have the same value, so the condition is true and ??? is displayed

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Type Safety

- Rewrite the code to use class enums
- Explain your results
  - The code does not compile, because enumerators from a class enum cannot be implicitly converted to int
- Modify the code to give the same results as for C-style enums
  - Use an explicit static_cast<int> to convert the enumerators

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